

# BSP-Android-TI-AM57x-PD17.1.0 Release Notes

Operating System	Android
BSP Release Status	RELEASED
Release Date	12 Jun 2017
Repository	<a href="#">PHYTEC Android Repos</a>
Binaries	<a href="#">BSP-Android-TI-AM57x-PD17.1.0.tar.bz2</a>
Source Archive	
Release Notes	<a href="#">Click Here</a>

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## Introduction

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This BSP provides a basis for development, deployment and execution of Android-based applications on the phyCORE-AM57x System on Module (SOM). For detailed information on the various software components included in the release and how to use them, please refer to the [Quickstart](#).

## Versioning

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### Software

Linux Kernel	4.4.45+ (Based on TI ASDK repo)
U-boot	2016.05 (Based on TI ASDK repo)
Android	Nougat-MR1 (Based on TI ASDK repo)

### Linux Device Tree Summary

Default dts target	am57xx-phycore-rdk.dts
Default dtsti include description	Default dtsti include list
SOM	am57xx-phycore-som.dtsi
Carrier Board	am57xx-pcm-948.dtsi

LCD-018 display (7" display w/ cap. touch)	am57xx-phytec-lcd-018.dtsi
WiLink8	am57xx-phytec-wlan-wilink8.dtsi
VM-009 Camera Module	am57xx-phytec-vm-0xx.dtsi

## Compatible Hardware

### Supported Hardware Versions

Hardware Description	PCB Version
phyCORE-AM57x SOM	1428.3
phyCORE-AM57x Carrier Board	1435.2

## Compatible Expansion Boards and Accessories

Module Name	Part Number	PCB Version	Description
7" WVGA LCD w/ Capacitive Touch	LCD-018-070-KAP	1365.1	ETM0700G0DH6 LCD Display w/ EDT-FT5406 Capacitive Touchscreen Controller

## BSP Download

Prebuilt images of BSP-Android-TI-AM57x-PD17.1.0 can be downloaded from the link below:

[BSP-Android-TI-AM57x-PD17.1.0 Release](#)

## Quickstart

Quickstarts for BSP-Android-TI-AM57x-PD17.1.0:

### Content by label

There is no content with the specified labels

## BSP Features

Interface	Detail	Implemented	Tested	Status in Device tree	Notes
UART	uart3	Yes	Yes	Yes	Connector X18 (default serial console)
	uart4	Yes	No	<a href="#">[click for info]</a>	
	uart5	Yes	Yes	Yes	Connector X17
	uart6	Yes	No	<a href="#">[click for info]</a>	
	uart7	Yes	No	<a href="#">[click for info]</a>	
	uart8	Yes	No	<a href="#">[click for info]</a>	
	uart9	Yes	No	<a href="#">[click for info]</a>	
	uart10	Yes	No	<a href="#">[click for info]</a>	
I2C	i2c1	Yes	Yes	Yes	Available on expansion Connector X28
	i2c2	Yes	Yes	Yes	Connected to HDMI1_DDC
	i2c3	Yes	No	<a href="#">[click for info]</a>	
	i2c4	Yes	Yes	Yes	Used for Audio Codec - available on expansion Connector X28
	i2c5	Yes	No	<a href="#">[click for info]</a>	

Ethernet	cpsw_emac0 (RGMII0 on SoM)	Yes	see <a href="#">Known Issues</a>	Yes	RGMII0 - KSZ9031RNX SoM PHY Connector X7
	cpsw_emac1 (RGMII1 on CarrierBoard)	Yes	Yes	Yes	RGMII1 - KSZ9031RNX Connector X8
Display and Touch	Analog Touch Control 1	Yes	Yes	Yes	Capacitive: ETM-FT5x06 (on LCD-018), I2C4
	Analog Touch Control2	No	No	No	Resistive: STMPE811 (on CB), I2C4
	PWM Backlight	Yes	see <a href="#">Known Issues</a>	Yes	ehrpwm0 (EHRPWM1A on CB)
	24-bit LCD Interface	Yes	Yes	Yes	LVDS Connector X25 requires LCD-018
	HDMI	Yes	Yes	Yes	hdmi1_ddc Connector X24 (encoder TPD12S on carrier board)
McASP	mcasp1	Yes	Yes	Yes	
	mcasp2	Yes	No	<a href="#">[click for info]</a>	
	mcasp5	Yes	No	<a href="#">[click for info]</a>	
	mcasp6	Yes	No	<a href="#">[click for info]</a>	
	mcasp7	Yes	No	<a href="#">[click for info]</a>	
	mcasp8	Yes	No	<a href="#">[click for info]</a>	
eMMC/SD /SDIO	mmc1	Yes	Yes	Yes	Connector X2
	mmc2	Yes	Yes	Yes	eMMC on SOM
	mmc3	Yes	Yes	Yes	Connector X26 (WiFi/BT connector)
USB	usb1	Yes	Yes	Yes	USB 3.0 Standard-A Connector X30 (Host only)
	usb2	Yes	Yes	Yes	USB 2.0 Mini-AB Connector X9 (device default); signals may also be routed to X19 (Standard-A)
CAN	can1	Yes	Yes	Yes	DB9 Connector X6
	can2	Yes	Yes	Yes	Pin Header Connector X5
MCSPI	spi1	Yes	Yes	Yes	Connector X28 (Expansion connector) enabled using spidev on X_SPI1_nCS0
	spi2	Yes	No	<a href="#">[click for info]</a>	
	spi3	Yes	No	<a href="#">[click for info]</a>	
	spi4	Yes	No	<a href="#">[click for info]</a>	
QSPI	qspi1	Yes	see <a href="#">Known Issues</a>	Yes	NOR Serial Flash on SOM
SATA	sata1	Yes	Yes	Yes	Connector X11 (SATA) and X12 (power connector)
PCIe	pcie1	Yes	Yes	Yes	Connector X27 (PI6C557 4x PCIe connector)
IPU	ipu1	Yes	Yes	Yes	
	ipu2	Yes	Yes	Yes	
DSP	dsp1	Yes	Yes	Yes	
	dsp2	Yes	Yes	Yes	
GPIO	User Buttons and LEDs	Yes	Yes	Yes	
Memory	EEPROM	Yes	Yes	Yes	M24C32 on I2C1
	NAND (8/16 bit)	Yes	No	No	No NAND populated
	QSPI NOR Flash	Yes	see <a href="#">Known Issues</a>	Yes	N25Q128A connected to QSPI1_CS2
	eMMC	Yes	Yes	Yes	mmc2 on SOM
RTC	Internal AM57xx	Yes	Yes	Yes	Internal to processor
	PMIC TPS659037	Yes	Yes	Yes	TPS659037 I2C1
	External RTC	Yes	Yes	Yes	RV-4162-C7 on I2C1
Audio	Stereo Codec on CarrierBoard	Yes	Yes	Yes	TLV320AIC3007 codec; connected to McASP1 and I2C4

Communication	TIWi-BLE WiFi	No	No	No	Connector X26
	TIWi-BLE Bluetooth	No	No	No	Connector X26
	WiLink8 WiFi	Yes	Yes	Yes	Connector X26
Parallel Camera	VIN3 on i2c3	Yes	Yes	Yes	VM-009 at Connector X23 (phyCAM-P connector)
Hardware Acceleration	Graphics (PowerVR SGX544)	Yes	Yes	Yes	

[1] It may be possible to change the software configuration to utilize this interface even if it is not being set in the board's default configuration.

## New In This Release



This is the first release so all features supported in the [Features](#) section are new to this release. See below for some specific interface details.

- **Android**
  - **Version:** Nougat-MR1 (7.1.1)
  - **Connectivity**
    - WiFi: Wilink8 support
    - Ethernet: Gigabit on ETH1 port (see [Known Issues](#))
  - **Displays**
    - Parallel (via LVDS): LCD-018-070 7" display with capacitive touch (EDT-FT5406)
    - HDMI
  - **Storage**
    - USB1, USB2, SATA, SD, and PCIe storage devices all automatically mount as removable storage
  - **Audio**
    - Stereo playback available out of X13 (Headphones) and X15 (Line Out)
    - HDMI
- **Kernel**
  - **Version:** v4.4.45
- **U-Boot**
  - **Version:** v2016.05
  - **Boot**
    - MLO and u-boot.img can load from SD or eMMC based on boot switches. The Android Filesystem and kernel will always load from eMMC.
  - **Environment**
    - The U-Boot environment is stored in eMMC.

## Fixed In This Release

N/A

## Known Issues

- **Android**
  - Ethernet: ETH0 is available from the kernel but is not configured properly in the AFS.
  - Backlight: The Android brightness slider does not adjust the actual display brightness on the parallel display.
  - CAN: canutils package (cansend, candump) is not part of the current AFS so there are no available SocketCAN utilities.
  - Camera and Music built-in applications are not functional.
- **Kernel**
  - QSPI: Possible read failures on flash devices with HOLD function (Erratum i916). A software workaround has been implemented to limit QSPI to DIO-SPI mode and use internal weak pull-ups. The hardware workaround is to disable the internal pull-ups and add 10k pull-ups on X\_QSPI1\_D2 & X\_QSPI1\_D3.
  - PCIe: Native Command Queuing (NCQ) is unsupported and will need to be disabled if using a PCIe device that utilizes this feature.
- **U-Boot**
  - **Boot:** Booting the kernel and rootfs are currently only supported from eMMC.

## Technical Support

For further support please visit [PHYTEC's Support Portal](#)

